

# PATENT COOPERATION TREATY

TRANSLATION

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing (day/month/year) **See form PCT/ISA/210**

Applicant's or agent's file reference

**R 03169**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/FR2004/003354**

International filing date (day/month/year)

**22.12.2004**

Priority date (day/month/year)

**22.12.2003**

International Patent Classification (IPC) or both national classification and IPC

**C01 F7/00, C01 B33/193, C01 B13/36, C08K3/22**

Applicant

**RHODIA CHIMIE**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/EP

Authorized officer

Facsimile No.

Telephone No.

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Box No. I	Basis of this opinion
1.	<p>With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.</p> <p><input type="checkbox"/> This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).</p>
2.	<p>With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:</p> <p>a. type of material</p> <p><input type="checkbox"/> a sequence listing</p> <p><input type="checkbox"/> table(s) related to the sequence listing</p> <p>b. format of material</p> <p><input type="checkbox"/> in written format</p> <p><input type="checkbox"/> in computer readable form</p> <p>c. time of filing/furnishing</p> <p><input type="checkbox"/> contained in the international application as filed.</p> <p><input type="checkbox"/> filed together with the international application in computer readable form.</p> <p><input type="checkbox"/> furnished subsequently to this Authority for the purposes of search.</p>
3.	<p><input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.</p>
4.	<p>Additional comments:</p>

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 1-13 YES

Claims NO

Inventive step (IS)

Claims 1-13 YES

Claims NO

Industrial applicability (IA)

Claims 1-13 YES

Claims NO

2. Citations and explanations:

See Supplemental Box.

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Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

See Supplemental Box.

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

See Supplemental Box.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

**Box VIII:**

The application does not fulfil the requirements set forth in PCT Article 6 because claims 1, 4, 10, 14, 18 and 21 are not clear.

- (i) For a person skilled in the art, the term "hydrotalcite" defines a composition that contains (in any case) magnesium, aluminium and carbonate ions and in which these cations and this anion are optionally substituted with other metals and other anions. Claims 2 and 4 define the product in terms of features (the presence of Mg and Al) that are essential for the compound in claim 1. It follows that these features should be included in independent claims 1, 10, 14 and 18.

If the term "hydrotalcite" is considered to define compounds (and hydrotalcite-containing compositions) that do not contain Mg and Al, such compounds are not supported by the description of the application (see the examples).

- (ii) Claim 6 contains a preference ("in particular, only") that should constitute the subject matter of a dependent claim in order to avoid any doubt as to the desired scope of protection.

- (iii) Even though claims 1 and 4 have been drafted as separate independent claims, it appears that they

Supplemental Box

have the same subject matter and that they differ only by virtue of a variation in the definition of the subject matter for which protection is sought and the terms used to define the features thereof. It follows that these claims are not concise and do not, therefore, fulfil the requirements set forth in PCT Article 6.

**Box V:**

(i) Reference is made to the following documents:

D1: US-A-4 637 992;

D2: EP-A-1 069 074.

(ii) Document D1, which is considered to be the prior art closest to the subject matter of claims 1, 4 and 10, describes clays (Al/Si-based and kaolinite and kandite or smectite and vermiculite clays; see column 3, lines 9-22) that contain mineral oxides such as silica between the structural layers thereof (column 3, line 68).

The subject matter of claims 1, 4 and 10 of the present application differs from said document D1 in that the silica is present in hydrotalcite compounds.

It follows that the subject matter of these claims is novel (PCT Article 33(2)).

Supplemental Box

The problem that the present invention is intended to solve can therefore be considered to be that of producing a hydrotalcite composition intercalated with silica and having enhanced dispersibility in polymer matrices.

The solution to this problem, as proposed in claims 1 and 4 of the present application, is considered to involve an inventive step (PCT Article 33(3)).

Claims 10 (a method for preparing the intercalated hydrotalcite composition), 14 (the use of the compound), 18 (the polymer compositions containing said compound) and 21 (the end product containing said compound) also fulfil the PCT requirements of novelty and inventive step.

- (iii) Document D2 describes a composition consisting of hydrotalcite and colloidal silica. Unlike in the present application, the silica is not present as an intercalated compound but as a separate phase (as a binder in a phase mixture).
- (iv) The applicant is requested to submit amended claims (as indicated above) with a description that is in line with such claims.



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Supplemental Box

**Box VII:**

Contrary to the requirements of PCT Rule 5.1(a)(ii), the description does not indicate the relevant prior art disclosed in documents D1 and D2, nor does it cite said documents.